

Statement of
George C. Freeman, Jr.
for
The Utility Air Regulatory Group
before
The Environmental Protection Agency
December 12, 1978 Hearing on
Revised New Source Performance
Standards for Fossil-fuel Fired Electric
Utility Steam Generating Units

I. Introduction

I am George C. Freeman, Jr. I am appearing here today on behalf of the Utility Air Regulatory Group (UARG) which is an ad hoc group established to participate in EPA's rulemakings implementing the 1977 Amendments to the Clean Air Act. UARG's *Members* membership covers the entire spectrum of the electric utility industry. It consists of the Edison Electric Institute (EEI), the National Rural Electric Cooperative Association, and 87 individual utility systems that collectively own a majority of the generating capacity in the United States.

I am accompanied today by Mr. A. Joseph Dowd, Senior Vice President and General Counsel of the American Electric Power Service Corporation who is also Chairman of the UARG Policy Committee; Mr. Randall E. Rush of Southern Company Services who is Chairman of the UARG Scrubber Subcommittee; Mr. L. Kenneth Newsome of Virginia Electric and Power Company who is Chairman of the UARG Continuous Monitoring Subcommittee; and Mr. Paul C. Bailey of Southern Company Services who is Chairman of the UARG Particulate Subcommittee. A number of UARG's consultants are also present

today to help respond to any questions members of the EPA panel may have concerning the factual bases for UARG positions.

Over the last year UARG has cooperated with EPA in its development of a macro-economic model for the NSPS rulemaking. UARG has also mounted its own substantial modeling effort. At the request of EPA technical staff in the fall of 1977, UARG attempted to define potential major issues in the rule-making, and stated its preliminary position with respect to those issues prior to the Staff's revelation of its initial recommendations. These recommendations and a large body of supporting materials were the subject of a two day NAPCTAC meeting in December 1977. Since that time, EPA has been developing its record on technical issues independently.

UARG has undertaken a major fact-finding program of its own and has modified its preliminary positions on several occasions as a result of new data and information.

In light of the 1977 Amendments to the Clean Air Act and the facts as they now stand, UARG has recommended new major limitations on its own new coal-fired generating plants. Thus, UARG proposes new SO₂ requirements that would impose scrubbers on virtually all new plants, while at the same time providing needed flexibility for further development of scrubber technology on higher sulfur coals and greater incentives for the socially and environmentally preferable front-end technologies.) The UARG sliding scale proposals would also reconcile percentage removal requirements with national energy and economic objectives, by

UARG POSITION

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minimizing adverse inflationary and oil consumption effects of the new regulations. Finally, the UARG proposal of a 30-day averaging time is more consistent with current technology than EPA's 24-hour proposal, would minimize future enforcement problems and would not impose additional deterrents on the use of higher sulfur coals.

UARG's particulate recommendations are based on the current state of technology and are in accord with the technical assessments of DOE. UARG's position on NO_x is based on practical considerations of technological possibility and the balancing of the competing environmental, energy and economic (including anti-competitive effects) aspects of NO_x regulation.

The differences between the UARG proposals and those EPA staff proposals published in regulatory form on September 19 (the September 19 EPA proposals) can be simply stated: UARG's proposals take into account all of the statutory factors spelled out in section 111(a) including technological feasibility, costs, nonair quality health and environmental impacts and energy requirements. The September 19 EPA proposal does not.

II. Procedural Aspects of the Rulemaking

Before turning to the substantive questions which must be addressed during the next three days by the public and the Agency, I would like to discuss our views on the manner in which the Agency has run this rulemaking to date and the continuing failure of the Agency to meet the procedural requirements of the Clean Air Act and the Administrative Procedure Act (APA).

Under both section 307(d) of the Clean Air Act and section 553 of the APA, the Agency has an obligation to disclose fully at the time it publishes proposed rules the entire record upon which it bases its proposal. Section 307 makes the minimum bounds of this obligation explicit: at the time of initial publication, EPA must provide (1) the factual data on which the proposed rule is based, (2) the methodology used in obtaining and analyzing that data and (3) the major policy considerations and legal interpretations underlying the proposed rule. EPA has to date failed to comply with these requirements.

As the preamble to the September 19 proposed regulations points out, data and other information to support certain aspects of the Agency's proposals is not yet available. For example, EPA's macro-economic analysis is still being carried out, and the assumptions used in that analysis have changed significantly since September. The Agency has only recently undertaken a program designed to obtain information to support its proposed 24-hour averaging time for SO₂. And data on the impact of flue gas desulfurization systems on the ability of units burning higher sulfur coals to meet the proposed particulate standard has yet to be provided by the Agency. Other information vital to a determination of the feasibility and appropriateness of EPA's proposal has been coming out piecemeal since the September 19 publication. This failure to provide data to support critical portions of the Agency's proposal at the time the proposal was published has led to EPA's

failure to adhere to the second major requirement of both section 307(d) of the Act and section 553 of the APA -- provision of adequate opportunity for the interested public to review and comment on the factual data, methodologies and rationale underlying the Agency's proposed rules.

For over two and one-half years, EPA has been developing information upon which to base its proposal. On September 19, EPA gave the public just 60 days to comment on the fruits of that two and one-half year effort much of which was made available for the first time on that date. We requested an extension until January 15, 1979, of the schedule for submittal of initial comments on the September 19 proposal. We considered this extension the minimum necessary to enable UARG and its consultants to review adequately the voluminous, albeit incomplete, record. Yet, EPA refused our request. Instead, the Agency provided only 25 extra days for submittal of initial comments. This refusal to provide an adequate period for meaningful public review of and comment on the material disclosed to the public on September 19, if left unremedied, will jeopardize the substantive adequacy of the record ultimately developed in this rulemaking.

But the Agency's failure to provide adequate time for comment on the September 19 record is only one part of the problem. As I have just mentioned, much of the information upon which the September 19 proposal was based was not released

until after that date. Some has not yet been released. Indeed, some of the data which would be necessary to support EPA's proposals still do not exist and are being feverishly generated by the EPA Staff. Certainly, the public cannot be said to have had an adequate opportunity to comment on EPA's proposal if it is being denied the opportunity to see the material on which EPA bases that proposal. Moreover, this failure to provide the public with the data and rationale underlying the Agency's proposal continues here today.

EPA could have made this hearing a forum at which the public could question the Agency's staff in order to probe the basis for the Staff's conclusions. Instead, EPA has turned this opportunity on its head. Rather than providing the public an opportunity to explore the factual predicates for its proposal, EPA has indicated its intent to channel the flow of information at this hearing in one direction -- to the Agency. This leaves UARG and others here today in a curious position. These hearings will disclose the basis underlying the positions taken by all the participants but EPA -- the only participant which has a statutory obligation to disclose that information.

This leads to my last point. The September 19 record was defective in a number of critical areas and clearly inadequate to support the Agency's proposal. UARG has submitted detailed questions to the Agency pointing out many of the major areas

where the record is presently either devoid of information or contains inadequate information upon which to base a rational conclusion. The Agency must fix a date by which its data gathering will be complete, and then republish its proposal as revised to reflect the data gathered by the Agency since September 19. It must then provide the public an opportunity to comment on its revised proposal and all of the information contained in the record at that time, including the information provided in response to the questions UARG and other members of the public have submitted concerning the September 19 record.

If the Agency determines not to follow this approach, it must provide another route for interested members of the public to ascertain the factual basis for and the rationale underlying the conclusions EPA has drawn in developing its proposal. Thus, if EPA determines not to repropose its regulations as I have suggested, it should reconvene this hearing 30 days after the close of the period for filing responses to comments on the September 19 proposal. At the reopened hearing, the Agency should make available a panel of EPA Staff experts to answer questions submitted by members of the public. We will submit to the Agency shortly detailed proposals for the procedural format of such a hearing.

If the Agency follows either of these suggestions it will of course be difficult, if not impossible, to promulgate revised NSPS by the end of March. But we do not believe that

this should deter the Agency from developing an adequate record or providing the public a meaningful opportunity to comment on that record. The courts in this Circuit have recognized that statutory deadlines for promulgation of regulations must give way when the Agency cannot perform the statutorily mandated task within the time provided. In view of the complexity of this rulemaking and the substantial impact it will have on the American public over the next 20 years, it is reasonable to assume that those same courts would not judge EPA harshly for failing to meet a March promulgation date here. Moreover, the settlement order in the recent District Court suit expressly reserved EPA's right to seek an extension of the March 19 promulgation deadline for just such a contingency as now exists.

III. The Applicable Law

I'll turn next to some of the substantive issues raised by this rulemaking. There was substantial debate in Congress during consideration of the Clean Air Act Amendments and the National Energy Act regarding the need to reconcile our national energy and environmental objectives. More recently, we have been told by the White House that our national energy and environmental policies have to be reconciled with our pressing national economic priorities. Indeed, at the same time the President called on labor and business to exercise self-restraint and to cooperate with his program of voluntary wage and price controls, he promised

that his Administration would "keep to a minimum those actions that directly increase private costs and prices -- actions that include regulations that add unnecessarily to costs and prices" This rulemaking will furnish the first solid test of that Presidential pledge.

ECONOMICS

Fortunately, section 111 of the Clean Air Act demands that EPA take potential inflationary impacts into account in promulgating new source performance standards. That section of the Act expressly requires EPA to base its revised new source performance standards on the "best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated." The Administrator must consider these factors in setting both emission limitations and percentage reduction requirements for new powerplants. % removal

It is also important to note that the Conference Report indicates a Congressional intent that the percentage removal requirement need not be uniform by specifically stating that "in establishing a national percent reduction for new fossil fuel-fired sources, the Conferees agreed that the Administrator may in his discretion, set a range of pollutant reduction that reflects varying fuel characteristics." The structure of the Act provides additional support for the proposition that a flexible percent reduction requirement can and should be set by EPA.

Part C of the amended Act, which contains the prevention of significant deterioration (PSD) requirements, requires the states to set the best available control technology (BACT) for new plants on a case-by-case basis. Part D, which governs non-attainment areas, requires the states to set lowest achievable emission rates (LAER) for new plants located in those areas. The fact that these BACT and LAER requirements cannot be less stringent than the revised new source performance standards indicates Congressional intent that the NSPS not be set by EPA at the outer limits of available technology. Some technological leeway must be left to permit the states to balance at each new plant local environmental conditions, local economic considerations and local employment needs.

IV. Proposed NSPS for SO₂

A. What is Not at Issue Here - Public Health

3 Proposals
The incremental differences in total national SO₂ emissions resulting from adoption of any of the three SO₂ standards under consideration by EPA (the EPA full scrubbing proposal, the DOE 0.8 floor or the UARG sliding scale) are small. Regardless of which approach is ultimately chosen, all new fossil-fuel fired powerplants will use SO₂ scrubbers or emerging technologies that assure significant further emission reductions of SO₂. And regardless of which alternative is chosen, other air quality requirements designed to ensure the public health and welfare independent of revised new source performance standards will have to be met.

Even if the marginal decreases in SO₂ emissions at issue here could be quantified in terms of lengthened life expectancy or increased relief from discomfort, these benefits might well be more than offset by decreases in life expectancies and increased discomfort resulting from the higher energy costs.^{*/} Electric air conditioning and space heating are major means of controlling temperature and humidity levels in the indoor environment where most of the persons in our society susceptible to marginal levels of air pollution spend most of their time. Cost is, of course, a major factor in the availability of electricity for those purposes. And under both the EPA-DOE and NERA analyses, EPA's "full scrubbing" option imposes greater aggregate national costs and also greater costs in every region than do the UARG and DOE proposals.

B. What is at Issue

1. Full Scrubbing versus the Sliding Scale

UARG believes that both its sliding scale proposal and to a lesser degree the DOE proposal are preferable to the EPA uniform percentage reduction proposal under all of the statutory factors which the Administrator is required to consider

^{*/} A recent study of deaths in New York City nursing homes in heat waves in 1972 and 1973 concludes that the number of deaths in nursing homes without air conditioning "was significantly greater than the number of deaths expected on the basis of mortality during cooler control periods." The study recommends "that nursing homes and other institutions for the elderly located in climates like that of New York be required to provide air conditioning." Early EPA health effect studies also suggested that high temperature and high humidity may be more closely associated with increased mortality in so-called "air pollution episodes" than air pollutant levels.

under section 111 of the Act. At the time he announced the September 19 proposal, the Administrator announced that he had an open mind on which of the various SO₂ proposals would ultimately be determined to meet the factors set forth in section 111 of the Act. It appears, however, that certain EPA regional officials may have already prejudged the outcome of this rulemaking since they are requiring that applicants for PSD permits demonstrate compliance with the EPA Staff's "full scrubbing" proposal. We hope that this is not national policy and that the Administrator continues to have an open mind on the question. We would also request that the Administrator direct his regions to do what the statute commands -- make BACT decisions on a case-by-case basis after fully considering all of the statutory factors. If at the conclusion of this rulemaking, revised NSPS for a source is more stringent than its BACT limits, the PSD permit can be modified.

Turning to the statutory factors the Administrator must consider in this rulemaking, let us look first at the question of what constitutes a "demonstrated technology."

Demonstrated Technology

There is apparent agreement among EPA, DOE and UARG that all of their SO₂ percentage removal proposals will "push" the development of better scrubber technology. The key issue is how far and how fast that technology may and should be "pushed." EPA concludes in the preamble to the proposed NSPS that Wellman-Lord, magnesium oxide, dual alkali, lime and limestone FGD systems are

capable of achieving the levels of removal efficiency (85 percent/24 hour average) and system reliability (90 percent with one spare module) reflected in the proposed NSPS. Available data, however, simply do not support the conclusion that long-term, reliable operation of non-lime/limestone FGD technologies have been demonstrated. Reliability and sludge disposal problems also continue to plague lime/limestone FGD technology. And an 85 percent removal efficiency has not been shown to be consistently achievable on a short-term (24-hour) averaging basis. Indeed, the Agency's data base has not yet related removal efficiency to any averaging time. In fact, there are grave inadequacies in virtually every aspect of EPA's evaluation of the state of lime/limestone technology. For example,

1. While EPA states that "certain practical changes in design, operation, and maintenance practices" will be necessary to enable lime/limestone FGD systems to meet the staff-recommended NSPS, nowhere are these "practical changes" identified.
2. EPA has not addressed certain critical operating parameters such as the impact of high sulfur coal and closed-loop operation on scrubber reliability.
3. Most of the data on which EPA bases its reliability and removal efficiency conclusions are the product of short-term testing. These data do not establish that scrubbers can continuously operate at the levels of reliability and removal efficiency reflected in the staff-recommended standard. The continuous monitoring data available are of questionable validity, and UARG has been informed that EPA has recently returned to the field to gather additional data on continuous scrubber performance.
4. EPA cites Japanese scrubber operation as a basis for conclusions concerning scrubber capabilities in the United States, but does not evaluate similarities and differences between Japanese and American scrubber applications and technology. Available data indicate that there are significant differences which prevent superficial comparisons.

5. Significant uncertainties remain in designing a scrubber to perform at high levels of reliability and removal efficiency. EPA has given little attention to the difficulty of predicting the scrubber design level required at a particular facility.

6. EPA has not examined sludge disposal and water quality problems associated with scrubber operation in light of recent water quality and solid waste legislation.

Finally, available data indicate that scrubber technology is further advanced on lower sulfur coal than higher sulfur coal. Thus, a percentage reduction standard that provides for a sliding scale on "middling" coals would afford greater flexibility for new plants that attempt to burn higher sulfur coal but then find that their scrubber does not meet design expectations.

interesting point
Under a sliding scale approach, plants that "miss the mark" in this manner could comply with the NSPS by shifting to a slightly lower sulfur coal and thus having to meet a lesser percentage reduction requirement. In contrast, the consequences of "missing the mark" under a uniform percentage requirement may well deter use of higher sulfur coals.

Cost

The second factor that must be considered under section 111 is the "cost" of the proposed standard. The EPA-DOE (ICF) and UARG (NERA) "Round One" and "Round Two" and "Round Three" macro-economic analyses show that the UARG and DOE alternatives are less costly overall and more cost effective than the EPA alternative. In particular, the most recent analyses performed by NERA for UARG indicate that:

1. The proposed NSPS revisions will substantially increase

the cost to the American public of the Clean Air Act including the cost of electric generation but the increase would be markedly less under the UARG proposal than under that made by EPA.

(a) The UARG proposal would increase the cost impacts of the Clean Air Act by 39 percent while EPA's proposal would increase those costs by 71 percent.

(b) Clean Air Act costs under the currently applicable NSPS would be 4.38 billion per year by 1990; those costs would be 6.1 billion under the UARG proposal and 7.6 billion under the EPA proposal in that same year. Thus, the industry proposal would raise costs by 1.7 billion per year in 1990 and the EPA proposal would raise costs by 3.22 billion.

(c) The present value of the increase in costs associated with these revisions over the period 1984-2020 would be about 47 billion under the UARG proposal and about 82 billion under the EPA proposal -- a difference of 35 billion dollars.*

2. Total utility emissions of sulfur dioxide would be little affected by any of the alternatives. At a \$15 oil price, total SO₂ emissions would be 25.04 million tons in 1990 under the current NSPS, 23.20 million tons, or 7.2 percent less, under the UARG proposal and 22.20 million tons, or 12 percent less, under the EPA proposal.

*/The results described above assume: (1) \$15 oil prices and electricity growth of 5.3 percent per year; (2) scrubber reliability of 70 percent per module for full scrubbing of high sulfur coal and 90 percent per module for partial scrubbing of low sulfur coal; (3) scrubbers containing sufficient redundant modules to assure 97 percent reliability; and (4) bypass of scrubbers if they are unavailable under emergency conditions. At higher oil prices these costs would be substantially increased. At \$18.20 per barrel the incremental cost of the UARG proposal rises from 1.74 to \$2.08 billion per year while the cost of the EPA proposal rises from 3.22 to 4.51 billion.

3. The incremental cost per ton of sulfur removal would be higher under the EPA proposal than under the UARG proposal but in either case these costs vastly exceed both the cost per ton of SO₂ removed under the applicable NSPS and state implementation plan requirements in effect prior to the 1977 Amendments to the Act and the estimates of the social benefit of sulfur dioxide removal that have been made to date.

(a) Incremental cost per ton of SO₂ removal is \$912 per ton under the UARG proposal but \$1063 per ton under the EPA proposal. *

(b) Costs per ton of SO₂ removed under the Clean Air Act prior to the 1977 Amendments were \$158 per ton. Thus, the incremental costs per ton of SO₂ removed under the EPA proposal are six times the historic average. Moreover, the National Academy of Sciences' liberal estimates put the benefits of SO₂ removal to the public health and welfare at \$200 per ton.

4. Each of the proposals will substantially decrease utility consumption of coal and increase consumption of oil and gas, but the EPA proposal is markedly worse in this regard than either the UARG or DOE proposals.

Consumption
of oil

(a) At a \$15 oil price utility coal consumption which is projected to be 1.23 billion tons in 1990 under current NSPS, falls by 77.8 million tons (to 1.15 billion) under the UARG proposal, and by 144.9 million tons (to 1.08 billion) under the EPA proposal. Oil and gas consumption would be 1.14 million barrels per day in 1990 under current NSPS and rises to 1.92 million barrels per day under the UARG proposal (a rise of 780,000 barrels of oil per day) and 2.63 million under the EPA proposal (a rise of 1.4 million barrels per day).

(b) These shifts are less but still quite significant under an \$18.20 per barrel oil price. At this price oil consumption is 0.33 million barrels per day in 1990 under current NSPS, 0.45 million under the UARG proposal, and 0.59 million under the EPA proposal.

5. The UARG proposal has little impact on the regional distribution of coal production in the United States. The EPA *E/W* proposal markedly diminishes Western coal production while *Argument* leaving Eastern production virtually unchanged. In the Appalachian coal producing region, which is the most vulnerable to employment losses during this period, the EPA proposal would diminish projected production in 1990 under the current NSPS by 19 million tons. The EPA proposal would result in increased production in 1990 in only the Central region -- Ohio, Indiana, Illinois -- and the increase is only 6.0 million tons.

6. While reducing total SO₂ emissions modestly, the EPA proposal increases reliance on high sulfur coal. High sulfur coal production in 1990 would increase from 27 percent of total production under current NSPS to 30 percent under the EPA proposal. Under the UARG proposal, reliance on high sulfur coal is essentially unchanged.

7. Each of the SO₂ proposals substantially increases the production of scrubber sludge which may be designated as a *Sludge* hazardous waste under the Resource Conservation and Recovery Act. However, the increase in sludge production under EPA's full scrubbing proposal is nearly seven times that which would result from UARG's sliding scale.

(a) Scrubber sludge production in 1990 would be 44.4 million tons under the EPA proposal but only 33.3 million tons under the UARG proposal. Sludge production would be 31.5 million tons in 1990 under the current NSPS.

(b) If scrubber sludge is classified as a hazardous waste under the Resource Conservation and Recovery Act, and if disposal costs were an additional \$20 per ton as one EPA source has suggested, these additional disposal costs would increase the costs of the EPA proposal by \$222 million relative to the UARG proposal.

8. All of the proposed NSPS revisions have a marked impact on the marginal cost of electricity but the impact of the EPA proposal on marginal cost is much greater than UARG's. The EPA proposal increases marginal electric costs by 10 percent over current NSPS. The impact of the UARG proposal is about 3.0 percent.

9. The impacts of the EPA proposal are extremely unequal on a regional basis. In Texas, Kansas, Oklahoma, the Northern Rockies and the Pacific Northwest the EPA proposal increases marginal electric costs by 16-19 percent. The cost impact is *Two is a plus for PA.* 5-6 percent in the Northeast, 9-10 percent in the South and 10-15 percent in the Midwest and the remainder of the West. The UARG proposal reduces these marginal cost increases to 7 percent in the most heavily impacted areas, 2-3 percent in most of the East and 3.5 percent in the remainder of the West.

11. These sharply differential cost impacts of the EPA proposal are likely to lead to regional disruption of employment in industries using substantial amounts of electricity. Assuming this marked increase in marginal cost will be passed on to industrial customers, the competitive positions in international trade of the stone, clay, glass, primary metal, chemical, petroleum, textile, and paper industries, which are substantial users of electricity, are likely to be adversely impacted by the EPA proposal.

Nonair Quality Health and Environmental Impact

The third factor that must be considered by the Administrator in establishing revised NSPS is "nonair quality health and environmental impacts." As discussed above, the EPA full scrubbing proposal would result in the production of much more scrubber sludge than the UARG and DOE alternatives. Less sludge production means greater flexibility in power plant siting, which can mean more environmentally compatible sites. In addition, the EPA proposal would require much more lime scrubbing, as distinguished from limestone scrubbing, than the UARG proposal. The resulting increase in lime production would result in increased air and water pollution and solid waste storage problems at the lime production facilities. Adverse nonair quality health and environmental impacts are not, however, unique to the SO₂ proposal.

Energy Requirements

The fourth factor that must be analyzed under section 111 is the "energy requirements" associated with various alternative NSPS. As indicated above, the EPA full scrubbing proposals results in greater oil consumption in the United States than either the UARG or DOE alternatives. This difference could range between 300,000 to 800,000 barrels a day in 1990 under various assumptions. Most of this increased oil consumption results from the economic penalty full scrubbing imposes and which in turn discourages "phase out" or "phase down" of existing oil and gas fired plants. The EPA proposal would also preclude use of bypass for reheat at plants burning lower sulfur coal and


thus would impose a greater "energy penalty" on electric generation than either the UARG or DOE alternatives. Moreover, increased lime production required by the EPA proposal would increase national energy consumption. And the EPA option would also discourage strengthening of transportation facilities to carry low sulfur coals from the West to the Midwest and East (such as by rail to the Great Lakes, then to the Midwest and East over the Lakes), thus, lessening the availability of low sulfur coal for non-utility use.

2. Encouragement of "Innovative Technologies" and Use of "Local Coals"

The UARG proposal also better satisfies two other legislative concerns reflected in the 1977 Amendments and their legislative history than does EPA's proposal. Section 111 by its nature and subsection 111(j) by its express language reflect Congressional intent to encourage innovation. But section 111(j) expressly provides that, in order to qualify for a waiver, the EPA Administrator must find that the new technology will achieve reductions in emissions at least equivalent to that required by the then current NSPS. The EPA fixed percentage reduction proposal would discourage, and in certain cases preclude, the granting of section 111(j) waivers for promising new technologies that may have fewer side effects than those upon which EPA's proposal is based. Solvent refined coal, dry scrubbers, and other promising technologies which may achieve 50-80 percent removal might be abandoned by the utility industry if an 85 percent

across-the-board standard were adopted. And fluidized bed combustion could be discouraged in view of the risk a company would have to assume if the system did not fulfill design expectations.

The UARG and DOE proposals would also better foster the use of "local coals" than would EPA's proposal. While we do not believe this objective of the House Committee rises to the point of transcending the express statutory requirements of section 111(a)(1) to consider and balance the four statutory factors, it (like the anticompetitive and other economic effects of proposed standards) is appropriately taken into account in considering "costs." Employment effects in the coal industry, like all other major secondary economic effects, are obviously relevant, just as are effects on employment in the steel, aluminum, cement, chemical, and other electric-energy intensive industries resulting from higher electricity costs.



The ICF and NERA analyses both show that none of the three different proposals for SO₂ percentage reduction requirements is likely by itself to increase substantially regional employment in the coal mining industry over that which would result under the other alternatives. Coal production in 1990 under all of the alternatives should be substantially greater than current coal production. The greatest increases are projected for the West where coal production rises five to six-fold between 1977 and 1990 and in the Midwest where production triples. The

Appalachian region is projected to sustain the slowest growth between 1976 and 1990. These patterns emerge under all of the alternative proposals; and consequently, for the West and Midwest sections of the country employment in coal production is expected to grow substantially under all of the proposed alternatives. The only region of the country in which reduced employment is possible is in the Appalachian region. However, Appalachian coal production is substantially higher under the DOE and UARG sliding scale alternatives than under the EPA full scrubbing alternative. As a result, the risk of reduced employment in the Appalachian region is less under either the UARG or DOE proposal than under the EPA proposal.

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3. "Emergency" Bypass

Scrubber bypass provisions should permit operation of a generating unit whenever required to preserve system integrity. Criteria governing bypass should consider (1) necessary spinning reserves; (2) area supply problems; (3) undesirability of concentrating spinning reserves in one unit; and (4) necessity to look ahead to the load projections and reserves for the next day before shutting down a malfunctioning unit. We believe that the EPA Staff and UARG are in substantial agreement on this issue.

4. 1.2 lb/MBtu versus 1.5 lb/MBtu "Ceiling"

While this issue has been obscured by the debate over the full scrubbing option versus the sliding scale, it should not

be forgotten. There are substantial reserves of very high sulfur Midwestern and Appalachian coal which will be barred from use by the 1.2 lb/MBtu emission limitation even if it proves possible to achieve sustained, reliable 85% removal with scrubbers on high sulfur coals.

VI. Proposed NSPS for Particulate

The notice accompanying the proposed NSPS and related EPA background information discloses that several important issues that are critical to developing a complete record have not been assessed adequately by EPA in the formulation of its proposed particulate standard. For example,

- (1) Critical information (control equipment design and operating parameters, fuel characteristics, and operating characteristics of the generating unit) necessary to evaluate and interpret the performance of particulate control systems has not been included in much of the EPA data base.
- (2) EPA's background information contains virtually no information on the overall cost-effectiveness on the proposed particulate NSPS or the cost-effectiveness of various control technologies in conjunction with FGD systems at levels of control.
- (3) EPA has not addressed adequately the potential effects of proposed NSPS for NO_x and SO₂ on the proposed particulate NSPS.
- (4) EPA's data base is too small and incomplete to provide sufficient statistical support for the proposed particulate NSPS.
- (5) EPA's data base on baghouses is not representative of the size and type of generating units that will be subject to the particulate NSPS. That data base is insufficient to support a claim that at present baghouses are adequately "demonstrated" technology for control of particulate emissions from large pulverized coal-fired generating units, particularly those firing higher sulfur coals.

(6) EPA's data base, comprised of results from a small number of isolated tests (i.e., performance/acceptance and compliance), does not represent the continuous performance of particulate control systems during day-to-day operation, including normal variations caused by such occurrences as soot blowing and load fluctuations.

(7) EPA has not evaluated the ability of test methods to measure accurately and precisely the very small mass of particulate matter necessary to determine compliance with the proposed NSPS.

UARG believes that the Agency's record does not include sufficient data to support a finding that baghouses "have been demonstrated" for large pulverized coal-fired generating units. Moreover, while UARG has no argument with the notion that, given sufficient siting space and monetary resources, an ESP can be operated to achieve the proposed standard under controlled performance test conditions, EPA's data does not support the conclusion that such a standard could be achieved on a continuous basis. And we believe that, taking into consideration the cost, non-air quality health and environmental impacts and energy requirements associated with achieving the proposed standard with an ESP, the data presented by EPA do not support the conclusion that ESPs have been "adequately demonstrated" at the 0.03 lb/MBtu level.

EPA's proposed particulate NSPS would also entirely preclude the use of wet particulate matter scrubbers for both low and high sulfur coals. We believe a more prudent approach would be to establish a standard that would encourage the use (and thus further development) of baghouses, while at the same

time allowing the use of other particulate control technologies, i.e., ESP, and, where conditions are favorable, wet particulate matter scrubbing in conjunction with SO₂ scrubbing.

Finally, because of a lack of data regarding scrubber slurry solids entrainment and sulfuric acid mist and other sulfate information, EPA's rulemaking record is at present inadequate to support any conclusion concerning an achievable particulate standard as measured after the FGD device. Data on these effects must be obtained and be reflected in the particulate NSPS ultimately established by EPA.

VII. Proposed NSPS for NO_x

Neither EPA's proposed emission limitations nor the continuous monitoring compliance requirement for nitrogen oxides are supported by the September 19 record.

Most of the data available to the Agency is from performance tests which do not support a continuous compliance requirement. The Agency does present continuous monitoring data in the record but information just made available shows that it is no longer valid. As a result, EPA has no basis for determining an appropriate emission limitation or averaging time when a continuous compliance requirement is imposed.

EPA should also be cautious in using the limited data that is available to revise the numerical emission limitations, even

when compliance is determined solely on a performance test basis, for the following reasons:

1. Most of the data is from existing boilers retrofitted with individual NO_x control techniques.
2. These tests do not show how much the combination of recommended control techniques can reduce NO_x emissions from modern boilers.
3. Most of EPA's data are derived from the inherently low NO_x emitting tangential boiler.
4. EPA recognizes that the other pulverized coal-fired boiler types have not been shown to be as effective in reducing NO_x emissions as the tangential boiler.
5. A sufficient analysis of the adverse side effects of low NO_x operation has not been performed. The potential side effects include boiler corrosion, slagging, reduced unit efficiency, decreased operating margins, enhanced safety hazards, and increased emission of other air pollutants.
6. EPA has failed to undertake an adequate assessment of the cost and energy requirements of complying with the proposed NO_x NSPS.
7. Data from the boilers subject to current NSPS contradict EPA's conclusion that each boiler-type/fuel combination can attain the proposed emission limitations even on a performance test basis.

Moreover, the Agency should not promulgate standards that prejudice the viability of boiler types and cannot promulgate such regulations without an adequate analysis of the potential anticompetitive effects of such regulations.

While UARG recognizes EPA's duty to revise the NSPS for the

the electric utility steam generating unit category, those new standards can reflect only the best technological system of continuous emission reduction that (taking into account cost, nonair quality health and environmental impacts and energy requirements) have been adequately demonstrated. The limited data available to the Agency do not justify either a change in the emission limitation or the compliance requirement of the current or proposed NO_x NSPS. If the Agency feels compelled to act on the data available, UARG recommends that EPA continue its practice of subcategorizing electric utility steam generators on the basis of boiler type and fuel type and that the Agency act cautiously.

The better course would be the continued acquisition of data from continuous monitors on continuous NO_x emissions through enforcement of its existing monitoring regulations. As sufficient data become available on each boiler-type/fuel combination, conclusions as to the appropriate emission limitation for either performance tests or continuous compliance (and any averaging time requirement) can be made at or before the next statutory mandated review of these standards four years from now.

VIII. Continuous Monitors and Compliance Requirements

The Agency should not establish standards on the basis of intermittent performance tests and require compliance with those standards on a continuous basis, as it has done here. The continuous compliance requirement can only be based on a history of continuous emissions or an analysis of the variations

expected from the performance test levels. The record is deficient in both respects for SO₂, particulate, and NO_x.

In addition, continuous monitors are not an adequately demonstrated technology for determining compliance with the proposed NSPS. The recognized errors inherent and allowed in their output prevent an accurate measurement of emissions. They have not been developed to the point that even a primary and redundant monitoring system can satisfy EPA's data acquisition requirements. As a result, EPA's recommended backup, manual sampling and analysis, may be the rule rather than the exception even though the Agency has not shown that these manual procedures can produce the data required in a reasonable and timely manner.

Finally, the Agency has not justified the need for continuous data to show compliance with the proposed NSPS.

In light of these considerations, the Agency should opt for a continuation of the present method of determining compliance, intermittent performance testing. Such testing can be conducted at the discretion of the regulatory agency and interim indications of emissions levels can be provided by continuous monitors when they operate or documentation of proper operation and maintenance when they do not.

IX. DUE PROCESS

Finally, I'd like to put to rest an argument we have heard with increasing frequency lately. The thrust of that argument is that any difficulties in complying with regulations due to

impossibility can be remedied by the exercise of "prosecutorial discretion." It must be remembered that the Agency is formulating regulations that are reenforced by severe criminal penalties. It is important that these regulations be understandable to those affected and command only what is possible. Congress clearly intended that when it designed Section 111(a). By the use of the word "demonstrated" Congress obviously intended that the technology upon which an NSPS was based should be well known and clearly capable of achieving the standard.

It is also important to note that the notion of "forcing" technology in order to protect the public health and welfare is not at issue here. Accordingly, the Supreme Court's decision in Union Electric cannot be invoked. If EPA were to ignore the statutory criteria of Section 111(a) and promulgate new source performance standards that command the impossible or nearly impossible, then the regulations would violate DUE PROCESS. And this constitutional infirmity could not be cured by any "law of prosecutorial discretion."

This "law of prosecutorial discretion" is a contradiction in terms and cannot be squared with the concept of due process and other constitutional safeguards. One of the axioms underlying our constitutional system is that "We live under the rule of law and not of men." This presupposes, among other things, that what is or is not a crime will be spelled out clearly in advance so that men can voluntarily obey the law and so they will not commit crimes in ignorance of the law. See, e.g.,

Republic Steel Co. v. Train, 559 F.2d 91 (6th Cir. 1977),
United States v. Pennsylvania Industrial Chemical Corp., 411 U.S.
655, 674 (1973). Thus our Constitution expressly prohibits ex
post facto laws and the concept of due process clearly encompasses
a requirement of mens rea for most offenses.

Since those in government charged with the detection
and prosecution of crime were entrusted with the awesome
powers of the State, and could commit abuses from good
motives as well as bad ones, the Founding Fathers thought
it necessary to impose a number of specific checks on
government officials in the exercise of those powers.

All these limitations make the definition, detection,
and punishment of crime more difficult. The Constitution
thus weighed the needs of those in charge of the government
for flexibility, convenience, and discretion against the
needs of a free society and deliberately chose to restrict the
former.

Applying those principles to this proceeding, it is
clear that the EPA staff proposal poses concerns of constitu-
tional dimensions. In many instances, individuals could
not know, and could not fairly be expected to know, when they
might be committing a crime. In some instances, they could also
have been ordered to do the physically impossible and their
failure to perform could be a crime. The injustices of such

a system are not cured by hoping that prosecutors will exercise their discretion benignly. Such an approach is anathema to the centuries-old traditions of Anglo-American law and clearly transgresses our Constitution. See, e.g., Reid v. Covert, 354 U.S. 1, 41 (1957).